

WHAT WE CLAIM IS:

33. An apparatus for processing substrates, comprising:

a nozzle plate;

at least one first nozzle disposed essentially centrally relative to said nozzle plate and extending perpendicular thereto, wherein said at least one first nozzle provides a radial flow therefrom; and

a plurality of second nozzles disposed in said nozzle plate at an angle of less than 90° relative thereto, wherein said second nozzles are separately controllable from said at least one first nozzle, wherein said second nozzles provide a flow therefrom directed transverse to said radial flow from said at least one first nozzle, and wherein said second nozzles are distributed over said nozzle plates such that said transverse flow therefrom deflects said radial flow from said at least one first nozzle into a spirally outwardly extending flow.

34. An apparatus according to claim 33, wherein said at least one first nozzle is a single point nozzle.

35. An apparatus according to claim 33, wherein said second nozzles form at least one nozzle group, which extends along a prescribed contour, especially a straight line.

36. An apparatus according to claim 35, wherein said straight line extends tangential to said at least one first nozzle.

37. An apparatus according to claim 33, which includes at least one further nozzle, which is disposed between said at least one first nozzle and said second nozzles, and is directed radially relative to said at least one first nozzle.

38. An apparatus according to claim 33, wherein said second nozzles are

disposed in said nozzle plate at an angle of 45°.

39. An apparatus according to claim 33, wherein said second nozzles are point nozzles.

40. An apparatus according to claim 33, wherein said at least one first nozzle and said second nozzles can have different pressures and/or can be supplied with different fluids.

41. An apparatus according to claim 33, wherein a rinsing fluid can be conducted via said at least one first nozzle.

42. An apparatus according to claim 33, wherein a vacuum can be applied to said at least one first nozzle.

43. An apparatus according to claim 33, wherein a gas can be conducted via said second nozzles.

44. An apparatus according to claim 37, wherein a common base is provided for said at least one first nozzle, said second nozzles, and said at least one further nozzle.

45. An apparatus according to claim 44, wherein an insert is insertable into said base, and wherein said at least one first nozzle is provided in said insert.

46. An apparatus according to claim 33, wherein an annular fluid chamber is disposed beneath said nozzle plate.

47. An apparatus according to claim 44, wherein said base is provided with a surface that surrounds said nozzle plate and is disposed lower than said nozzle plate, wherein said surface is provided with a plurality of bores for accommodating a corresponding number of spacers.

48. An apparatus according to claim 47, wherein said spacers are

adjustable.

49. An apparatus according to claim 44, wherein said base is provided with an overflow collar.

50. An apparatus according to claim 49, wherein said overflow collar is provided with at least one inwardly directed nozzle.

51. An apparatus according to claim 44, wherein a tank is provided that surrounds said base.

52. An apparatus according to claim 33, wherein a substrate carrier is provided for holding a substrate, and wherein a device is provided for conducting a fluid onto an outer side of said substrate carrier.

53. An apparatus according to claim 52, wherein said device is disposed on said substrate carrier.

54. A method of processing substrates, including the steps of:
providing at least one first nozzle, and a nozzle plate disposed parallel to a substrate, wherein said at least one first nozzle is disposed essentially centrally relative to said substrate and to said nozzle plate;

conducting a fluid, via said at least one first nozzle, at a right angle onto a substrate surface that is to be treated so that fluid striking said substrate is deflected into a radial flow between said substrate and said nozzle plate;

providing a plurality of second nozzles disposed in said nozzle plate at an angle of less than 90°, wherein said second nozzles are separately controllable from said at least one first nozzle;

conducting a fluid, via said at least one first nozzle and transverse to said radial flow, onto said substrate surface that is to be treated, wherein fluid is

simultaneously conducted onto said substrate surface by said first and second nozzles; and

wherein said second nozzles are distributed over said nozzle plate in such a way that said radial flow is deflected into a spirally outwardly extending flow.

55. A method according to claim 54, wherein said fluid is conducted via said second nozzles onto said surface that is to be treated in essentially a peripheral direction of said substrate.

56. A method according to claim 54, wherein said fluid is conducted onto said substrate surface that is to be treated via said second nozzles at an angle of 45°.

57. A method according to claim 54, wherein fluid is conducted onto said substrate surface that is to be treated via said first and second nozzles at different pressures.

58. A method according to claim 54, wherein different fluids are conducted onto said substrate surface that is to be treated via said first and second nozzles.

59. A method according to claim 54, wherein a rinsing fluid is conducted onto said substrate surface that is to be treated via said at least one first nozzle.

60. A method according to claim 54, wherein a vacuum is applied to said at least one first nozzle.

61. A method according to claim 54, wherein a gas is conducted onto the substrate surface that is to be treated via said second nozzles.

62. A method according to claim 54, wherein an overflow collar having at least one further nozzle is provided, and wherein a fluid is conducted onto an outer surface of a substrate carrier that carries a substrate via said at least one further

nozzle.

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